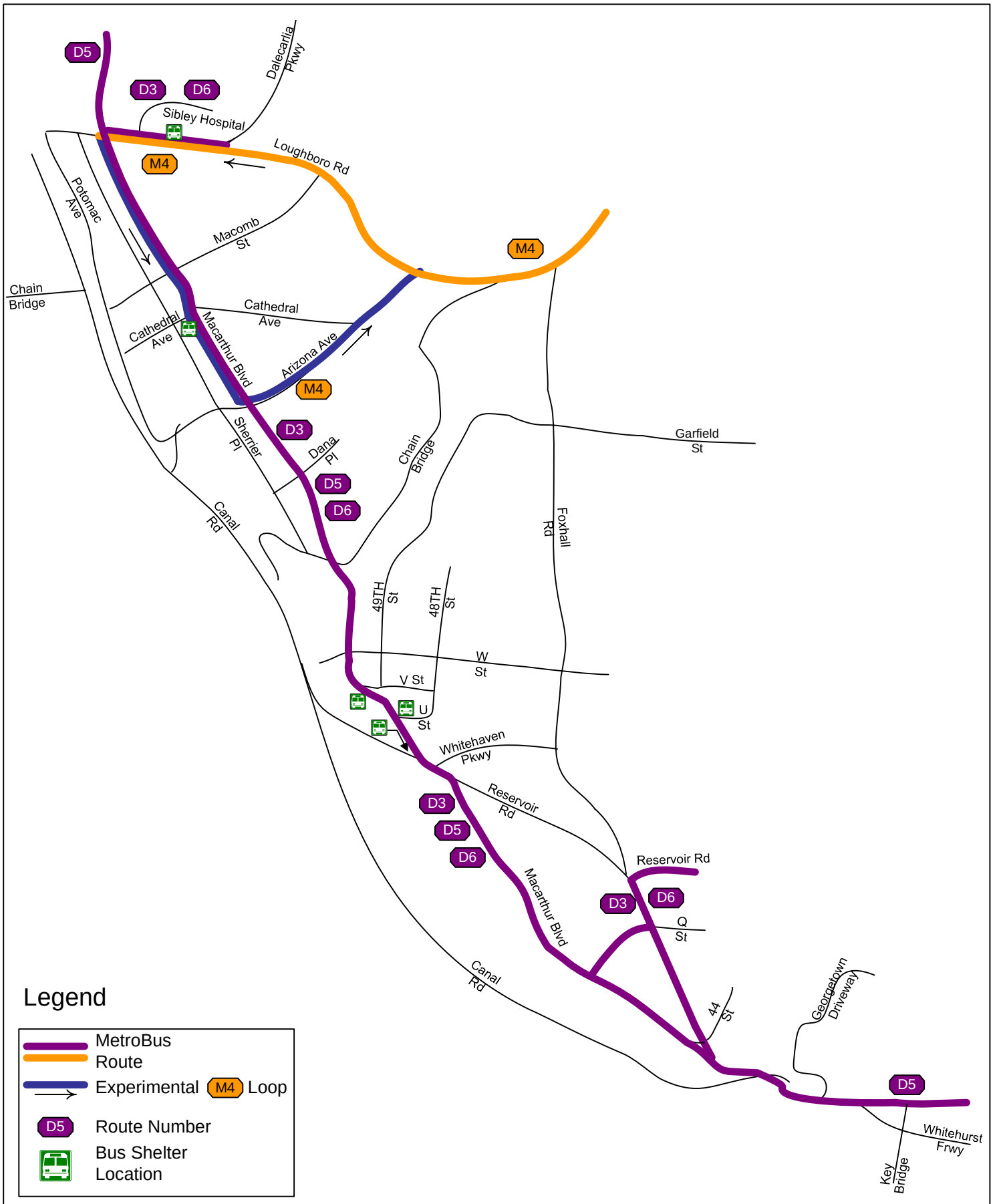


Not to Scale August, 2002	N	**Palisades Traffic Impact Study**	**Mass Transit Service**	**FIGURE 7**

On Sunday, this route operates from 5:16 AM until 1:15AM[1]. The trip path, roadways served in the study area, and Metro Stations served by this route are the same as the ones described above for Route D3.

WMATA Route D5 – MacArthur Boulevard – Georgetown Line

Route D5 operates on weekdays only. The route provides eastbound service during the morning rush hours, 6:52 AM – 9:20 AM, and westbound service during the afternoon rush hours, 4:29 PM – 7:14 PM. The bus operates with headways that range from 20 to 30 minutes[1]. As shown in Figure 7, the bus serves MacArthur Boulevard and Canal Road. The terminal for the eastbound trip, AM peak hours, and starting point for the westbound trip, PM peak hours, is the Farragut North Metro Station.

Route M4 – Nebraska Avenue Line

Route M4 enters the study area via Loughboro Road. The bus travels west on Loughboro Road to serve Sibley Hospital, continues south on MacArthur Boulevard and turns left on Arizona Avenue to travel east on Loughboro Road. This bus operates on weekdays only. Service begins at 5:56 AM and ends at 9:33 PM. The most prevalent headway is 20 minutes but they range from five to 30 minutes throughout the day[1]. This bus serves the Tenleytown – American University Metro Station. The loop around Arizona Avenue is a feature recently implemented and according to study area residents it has been received as a positive improvement of transit service in the community.

TRAFFIC VOLUMES

In order to evaluate existing traffic conditions throughout the study area, the Study Team collected turning movement counts at critical intersections during the peak periods. Additionally, the Study Team collected daily traffic counts at key locations throughout the study area. The following are the 21 critical intersections where the Study Team collected turning movement count data:

1. MacArthur Boulevard and Loughboro Road
2. Loughboro Road and Dalecarlia Parkway
3. Loughboro Road and Arizona Avenue
4. Foxhall Road and Loughboro Road
5. Canal Road and Chain Bridge
6. MacArthur Boulevard and Macomb Street
7. Canal Road and Arizona Avenue
8. MacArthur Boulevard and Arizona Avenue
9. Foxhall Road and Garfield Street
10. Canal Road and Reservoir Road
11. Foxhall Road and W Street
12. MacArthur Boulevard and U Street

[1] The timetables and detailed route maps for the bus routes that serve the study area are included in Appendix A

13. MacArthur Boulevard and Reservoir Road (North Leg)
14. MacArthur Boulevard and Whitehaven Parkway
15. MacArthur Boulevard and Reservoir Road (South Leg)
16. Foxhall Road and Whitehaven Parkway
17. Foxhall Road and Reservoir Road
18. Foxhall Road and MacArthur Boulevard
19. Canal Road and Foxhall Road
20. Canal Road and Key Bridge
21. Canal Road and Whitehurst Freeway

The counts were taken during the AM and PM peak periods, 7:00 AM - 9:00 AM and 4:00 PM - 6:00 PM, respectively, on a typical weekday (Tuesday, Wednesday or Thursday) during the months of November and December of 2001. No counts were taken the week of Thanksgiving.

Because all of the intersections were not counted the same day, there were minor discrepancies in the overall balance of traffic volumes throughout the study area network. The discrepancies are due primarily to traffic variations that occur from day to day. In order to improve the modeling of existing traffic conditions, the Study Team applied standard traffic engineering techniques to adjust the turning movement counts at intersections where unjustified imbalances were found. Figure 8 presents the existing, 2001, balanced peak hour turning movement counts for the study area. Appendix B presents the raw volume counts for the 21 intersections shown in Figure 8.

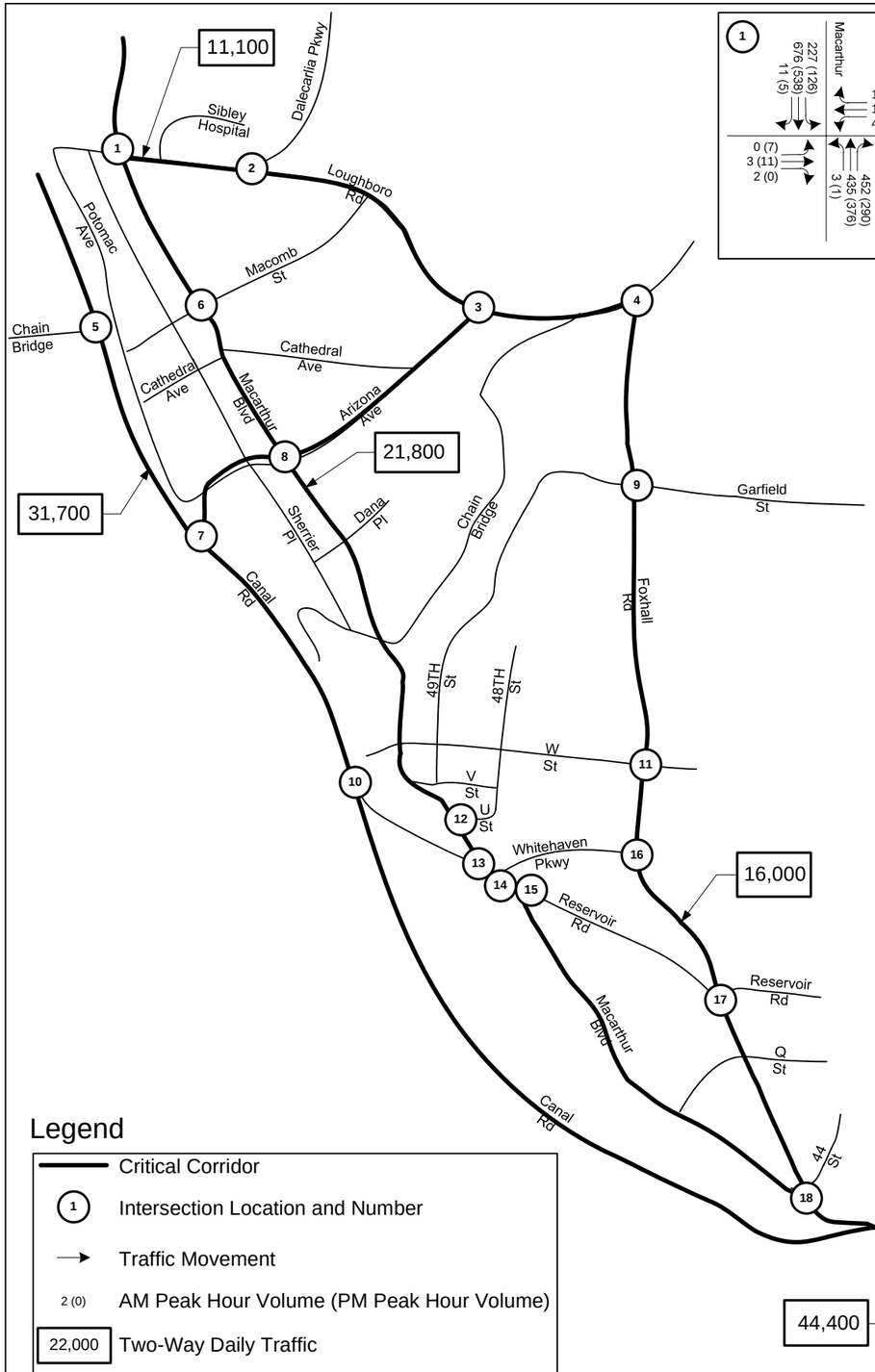
The Study Team collected automated Average Daily Traffic (ADT) counts over a two-week period, covering the end of November and beginning of December, at the following locations:

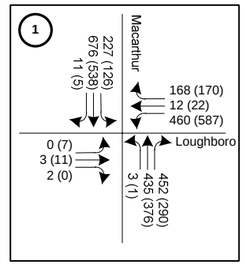
1. Canal Road between Foxhall Road and the Georgetown University driveway
2. Canal Road between Chain Bridge and Arizona Avenue
3. Foxhall Road between Whitehaven Parkway and Reservoir Road
4. MacArthur Road between Arizona Avenue and Chain Bridge Road
5. Loughboro Road between Dalecarlia Parkway and MacArthur Road

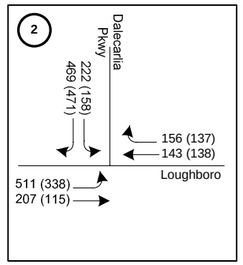
As Figure 8 indicates, Canal Road is the roadway in the study area with the largest daily volumes. East of Foxhall Road, Canal Road carries approximately 22,000 daily vehicular trips in each direction. Foxhall Road, north of Reservoir Road, carries approximately 8,000 daily vehicles in each direction. This is a large daily volume for a two-lane road.

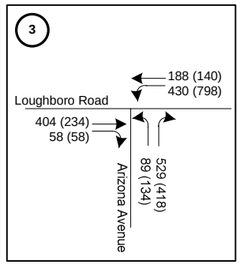
SPEED AND TRAVEL TIMES

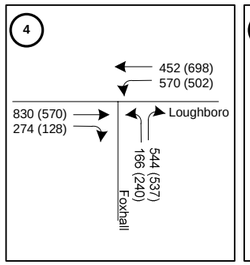
In order to gain an understanding of driving patterns and to gather information needed in the development of the traffic model for the study area, the Study Team collected information on speed and travel times on the critical corridors. The Study Team collected the data on travel times and delay on December 5th, 6th and 11th, 2001.

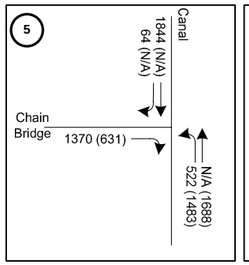


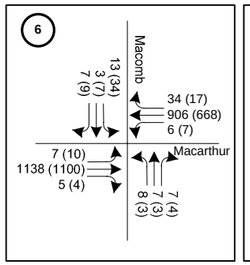


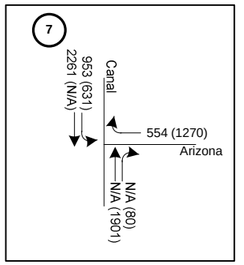


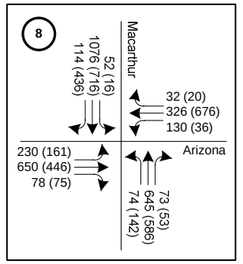


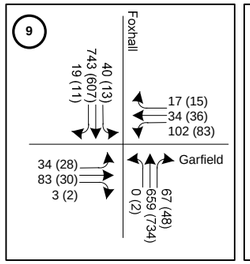


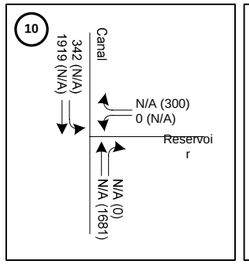


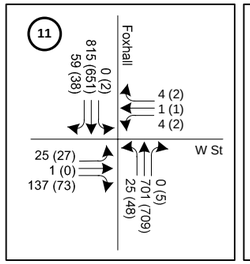


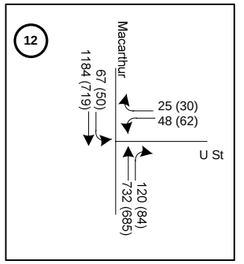


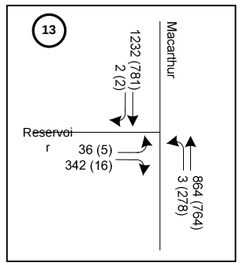


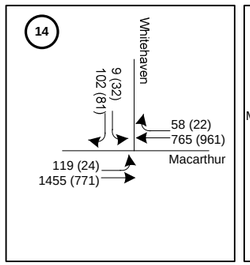


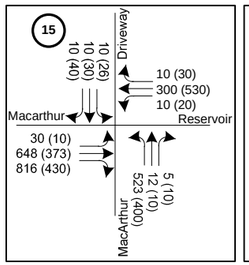


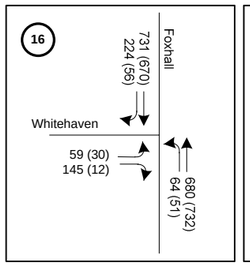


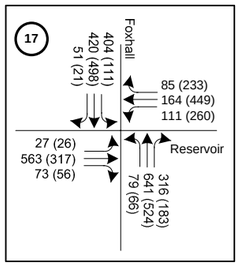


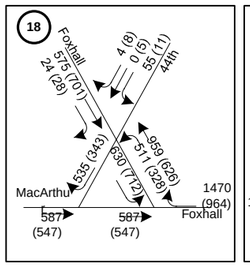


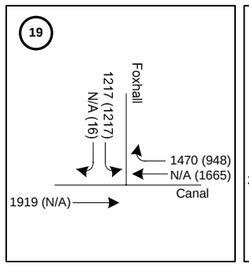


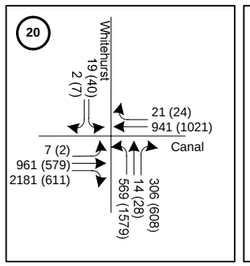


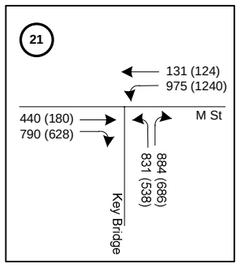












Legend

- Critical Corridor
- 1 — Intersection Location and Number
- Traffic Movement
- 2 (0) — AM Peak Hour Volume (PM Peak Hour Volume)
- 22,000 — Two-Way Daily Traffic

Note: Graphic depicts existing 2001 volumes. Minor adjustments have been made to balance traffic throughout the study area.

Not to Scale

August, 2002

N

Palisades Traffic Impact Study

2001 Existing Traffic Volumes

FIGURE 8

Study Team data collectors drove each of the five critical corridors several times in each direction during both the AM and PM peak hours, and recorded the elapsed travel times at predetermined travel points and the distance between the selected travel points. For the travel time runs, the data collectors were instructed to drive at the same speed as most of the vehicles traversing the study area. Thus, in some sections of the critical corridors, the data collectors traveled at speeds above the speed limit.

The Study Team calculated average speed for each roadway segment as well as an overall average speed for the corridor using the data collected on travel times and distances between time points. Vehicles consistently drive at speeds that exceed the speed limit. For example, as Figures 9 and 10 indicate, the average speed on Canal Road from Chain Bridge to Foxhall Road is 36 mph during the AM peak period and 37 mph during the PM peak period. This average speed calculation includes delays at the traffic signal at Foxhall Road during the AM peak period and at Arizona Avenue during the PM peak hour. If the delays at the traffic signals were not included, the estimated speeds would be much greater than the 35 mph speed limit. For example, as Table 1 shows, the recorded average speed on Northbound Canal Road between Foxhall Road and Reservoir was more than 10 mph over the posted speed limit.

As shown in Figure 9, the average speed on Foxhall Road and MacArthur Boulevard from Canal Road to Loughboro Road ranges from 19 to 23 mph during the AM peak period. There are several traffic signals that create delays for vehicles traveling on these two roads. Similarly to the observation on Canal Road, vehicles exceed the speed limits along certain segments of Foxhall Road and MacArthur Boulevard. As Table 1 notes, on in some segments of Foxhall Road vehicles travel at speeds that exceed the speed limit by more than 10 mph. While no speed data was collected during off-peak hours, the Study Team observed that speeds were generally higher than during peak hours.

The lowest speeds in the study area were recorded in the section of Canal Road between Foxhall Road and the Key Bridge. The average recorded speed for eastbound traffic was six and nine mph during the AM and PM peak hours, respectively.

Table 1
Average Travel Speed at Selected Segments

Roadway and Direction	Segment	Speed Limit	AM Peak	PM Peak
Canal Road Northbound	Foxhall Road - Reservoir Road	35	N/A	44.5
Canal Road Southbound	Reservoir Road – Foxhall Road	35	37.6	N/A
MacArthur Boulevard Northbound	Arizona Avenue - Cathedral Avenue	25	24.5	30.4
MacArthur Boulevard Southbound	Whitehaven Pkwy. - Reservoir Road	25	31.4	29.0
Foxhall Road Northbound	Whitehaven Pkwy. - W Street	25	30.1	21.4
Foxhall Road Southbound	W Street - Whitehaven Pkwy.	25	36.0	35.1
Loughboro Road Eastbound	Dalecarlia Pkwy. - Arizona Avenue	25	25.8	26.8
Loughboro Road Westbound	Arizona Avenue - Dalecarlia Pkwy.	25	25.9	27.7
Arizona Avenue Eastbound	MacArthur Boulevard - Loughboro Road	25	18.0	23.4
Arizona Avenue Westbound	Loughboro Road - MacArthur Boulevard	25	17.8	14.0

Note: n/a = not applicable.

Appendix C presents a list of the recorded speeds for all the studied segments in the Study Area.